

REMARKS

This communication is responsive to the Office Action dated August 11, 2009. Applicant has made no amendments by way of this communication. As such, claims 1, 3-5, 7-12, 15, 17-21, 23-33, and 39-45 remain pending.

Claim Rejections Under 35 U.S.C. § 103

In the Office Action, the Examiner rejected claims 1, 3-5, 7-12, 15, 17-21, 23-33, 39-45 under 35 U.S.C. § 103(a) as being unpatentable over Foster et al. (U.S. 6,925,328, hereinafter "Foster") in view of Weisner et al. (U.S. 7,024,249) or Burnes et al. (U.S. 2003/0195571 or Ferek-Petric (U.S. 2003/0204161). Applicant respectfully traverses the rejections. As a preliminary note, Applicant notes that Burnes and Ferek-Petric are disqualified as prior art under 35 U.S.C. § 103(c).

The Office Action indicated that Foster discloses an IMD in combination with an MRI device, whereby some of the components of the IMD are disabled during an MRI scanning session. The Office Action characterized FIG. 5 of Foster as disclosing the MRI device generating signals that are detected by the IMD and the signals are evaluated to determine whether or not to disable portions of the IMD. The Office Action acknowledged that Foster fails to disclose the use of wireless telemetry to send control signals to the IMD. To satisfy this shortcoming, the Office Action characterized Weisner as disclosing the use of control signals to control implantable medical devices through wireless telemetry. The Office Action therefore concluded that it would have been obvious to one of ordinary skill in the art to have modified Foster such that the control signals used to indicate the activation of the MRI pulse sequence are sent using wireless telemetry. Applicant respectfully disagrees.

The Office Action's arguments continue to have the same deficiencies indicated in the arguments in Applicant's previous reply filed on April 29, 2009. The Office Action, however, simply dismissed these arguments as being moot in view of the new ground(s) of rejection. Applicant's arguments set forth in the previous reply are not moot, however, as the primary reference is the same (i.e., Foster) and continues to have the same deficiencies.

As described in Applicant's previous reply, none of the signals (e.g., gradient coil activation, trigger signal or RF coil pulse) generated by the MRI device constitute a control signal received by the IMD prior to delivery of an electromagnetic radiation burst to a patient in whom the IMD is implanted and that causes blanking of one or more components of the IMD responsive to receipt of the control signal, as required by Applicant's claim 1.

If the activation of the gradient coils of the MRI device or the activation of a trigger voltage is considered to be the control signal, the IMD of Foster does not blank one or more components of the IMD in response to receipt of the control signal. As described in FIG. 5 of Foster, these signals simply cause a parallel-resonant circuit to be formed. *Foster, col. 10, lines 15–25*. As such, the IMD does not blank one or more components in response to the control signal, as required by Applicant's claim 1. To the contrary, the parallel resonant circuit does not function as an open switch to protect the circuitry until a signal at or near the resonant frequency is received, i.e., the RF pulses of the MRI. *Foster, col. 10, lines 26–52*.

If the RF coil pulse is considered to be the control signal, the IMD of Foster does not receive the control signal prior to delivery of an electromagnetic radiation burst to a patient in whom the IMD is implanted, as required by Applicant's claim 1. Instead, the "control signal" is the electromagnetic radiation burst. In other words, the control signal and the electromagnetic radiation burst (which would be the same in this situation) are received concurrently. This is different than Applicant's claim 1 in which the control signal is received prior to delivery of an electromagnetic radiation burst.

In any of the cases described above, the signals detected by the IMD in Foster are not control signals received via wireless telemetry. The Office Action acknowledges as much by indicating that Foster does not disclose the use of wireless telemetry to send control signals to the IMD. As mentioned above, however, the Office Action attempts to overcome this deficiency with the teachings of Weisner of the use of control signals to control the IMD through wireless telemetry. For the reasons set forth below, however, one of ordinary skill in the art would not modify Foster in view of Weisner as suggested by the Office Action.

First, Foster does not describe the MRI device communicating with the IMD via wireless telemetry or otherwise intelligibly communicate with the IMD. On the other hand, Weisner describes a programming device, not an MRI device, communicating with the IMD via wireless telemetry. Programming devices primarily operate to configure settings of an IMD or receive sensed data from the IMD while MRI devices operate to generate images of internal structure and function of a body of a patient and are conventionally not configured to perform wireless telemetry communication with an IMD. As such, there is no rational reason that one of ordinary skill in the art would modify the teachings of Foster to include wireless telemetry between the MRI device and the IMD.

Moreover, such a modification would still fail to arrive at the features of Applicant's claim 1. For example, the control signal sent via wireless telemetry would simply cause a parallel-resonant circuit to be formed. The parallel resonant circuit, however, does not function as an open switch to protect the circuitry until a signal at or near the resonant frequency is received, i.e., the RF pulses of the MRI. Therefore, the IMD still would not blank one or more components in response to the control signal, as required by Applicant's claim 1.

Applicant's independent claim 11 is directed to an implantable medical device (IMD) comprising a receiver to receive, via wireless telemetry, a control signal produced by a magnetic resonance imaging (MRI) system prior to application of an MRI electromagnetic radiation burst and a control unit that in response to the control signal, blanks one or more components the IMD for a time period including at least the application of an MRI electromagnetic radiation burst delivered by the MRI system. Applicant's independent claim 23 is directed to a system comprising a magnetic resonance imaging (MRI) device including a transmitter to transmit, via wireless telemetry, a control signal relating to application of an MRI electromagnetic radiation burst from the MRI device prior to application of the MRI electromagnetic radiation burst and an implantable medical device (IMD) including a receiver to receive, via wireless telemetry, the control signal produced by the MRI system prior to application of an MRI electromagnetic radiation burst and a control unit responsive to the control signal to blank one or more components of the IMD for a time period including at least the application of

the MRI electromagnetic radiation burst. For at least the reasons described above with respect to claim 1, Foster fails to disclose the limitations of claims 11 and 23, and provides no teaching that would have suggested the desirability of modification to arrive at the claimed invention.

Foster and Weisner fail to disclose or suggest a number of the features set forth in Applicant's dependent claims. These arguments were made in Applicant's previous reply, but were again dismissed as being moot in view of the new grounds of rejection. Applicant's arguments set forth in the previous reply are not moot, however, as Foster continues to suffer the same deficiencies. Weisner provides no teachings to overcome these deficiencies.

With respect to dependent claim 42, for example, Foster fails to disclose or suggest blanking one or more components of the IMD for a time period beginning prior to and including delivery of the electromagnetic radiation burst to the patient. Instead, FIG. 5 of Foster describes a parallel resonant circuit that functions as an open switch in response to a signal at or near the resonant frequency of the circuit. *Foster, col. 10, lines 15-25*. In this manner, the parallel resonant circuit only functions as an open switch during actual application of the RF pulses by the MRI device, not prior to the delivery of the electromagnetic radiation bursts, as recited in Applicant's claim 42. As such, it is not possible to expand the blanking period as suggested by the Examiner to include a few seconds before the RF pulses are applied.

As another example, Foster fails to teach or suggest the limitations of Applicant's independent claim 31 which recites a system comprising a programmer device defining timing for application of a magnetic resonance imaging (MRI) electromagnetic radiation burst and generating first and second signals indicative thereof, an MRI device responsive to the first signal and applying the electromagnetic radiation burst according to the timing indicated by the first signal and an implantable medical device (IMD) to receive the second signal from the programmer and blank one or more components of the IMD for a time period including at least the application of the MRI electromagnetic radiation burst. Foster does not describe a programming device that communicates with both the IMD and the MRI device.

For at least the reasons set forth above, the Examiner has failed to establish a prima facie case of unpatentability, as required by 35 U.S.C. § 103. Therefore, Applicant respectfully requests withdrawal of the rejection of claims 1, 3-5, 7-12, 15, 17-21, 23-33, 39-45.

Conclusion

In view of the above, it is submitted that the application is in condition for allowance. Applicant respectfully requests reconsideration and prompt allowance of all pending claims. Further, Applicant reserves the right to re-present any originally filed, cancelled, and/or previously unclaimed subject matter in a subsequently filed continuing application without prejudice or disclaimer.

Should any issues remain outstanding, the Examiner is urged to telephone the undersigned to expedite prosecution. The Commissioner is authorized to charge any deficiencies and credit any overpayments to Deposit Account No. 13-2546.

Respectfully submitted,

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